CLAIMS

What is claimed is:

1   1.   An apparatus comprising:

2   a table to store a plurality of entries for a packet in a sequence of

3   packets of a message transmitted from a first network to a second network,

4   the entries including a first connection identifier corresponding to the first

5   network, the entries being obtained from a description file of the packet;

6   and

7   a parser coupled to the table to parse the sequence of packets using

8   the table, the parser extracting the first connection identifier.

1   2.   The apparatus of claim 1 further comprises:

2   a translator coupled to the parser to translate the first connection identifier

3   into a second connection identifier corresponding to the second network.

1   3.   The apparatus of claim 2 wherein the table comprises:

2   at least a message type entry to specify a message type characterizing the

3   message; and

4   at least a data type entry to specify a data type of a subsequent packet in

5   the sequence of packets.

1   4.   The apparatus of claim 3 wherein the at least data type entry

2   indicates a location of the first connection identifier in the subsequent packet.

1   5.   The apparatus of claim 3 wherein the at least data type entry

2   comprises a termination entry to indicate that a remaining portion of the sequence

3   of packets does not contain the first connection identifier.

1   6.   The apparatus of claim 5 wherein the parser skips the remaining

2   portion of the sequence of packets upon recognizing the termination entry.

1   7.   The apparatus of claim 1 wherein the first connection identifier is

2   one of an address and a port identifier.

1   8.   The apparatus of claim 2 wherein the second connection identifier

2   is one of an address and a port identifier.

1   9.   The apparatus of claim 1 wherein the first network is one of a

2   private network and a public network.

1   10.   The apparatus of claim 1 wherein the second network is one of a

2   private network and a public network.

1   11.   The apparatus of claim 1 wherein the description file is an abstract

2   syntax notation (ASN) file.

1   12.   The apparatus of claim 11 wherein the table is generated by an

2   ASN compiler.

1   13.   A method comprising:

2   storing in a table a plurality of entries for a packet in a sequence of

3   packets of a message transmitted from a first network to a second network,

4   the entries including a first connection identifier corresponding to the first

5   network, the entries being obtained from a description file of the packet;

6   and

7   parsing the sequence of packets using the table, the parser

8   extracting the first connection identifier.

1   14.   The method of claim 13 further comprises:

2   translating the first connection identifier into a second connection

3   identifier corresponding to the second network.

1   15.   The method of claim 14 wherein storing comprises:

2   specifying a message type characterizing the message by at least a message

3   type entry; and

4   specifying a data type of a subsequent packet in the sequence of packets by

5   at least a data type entry.

1   16.   The method of claim 15 wherein the at least data type entry

2   indicates a location of the first connection identifier in the subsequent packet.

1   17.   The method of claim 15 wherein the at least data type entry

2   comprises a termination entry to indicate that a remaining portion of the sequence

3   of packets does not contain the first connection identifier.

1   18.   The method of claim 17 wherein parsing comprises skipping the

2   remaining portion of the sequence of packets upon recognizing the termination

3   entry.

1   19.   The method of claim 13 wherein the first connection identifier is

2   one of an address and a port identifier.

1   20.   The method of claim 14 wherein the second connection identifier is

2   one of an address and a port identifier.

1   21.   The method of claim 13 wherein the first network is one of a

2   private network and a public network.

1   22.   The method of claim 13 wherein the second network is one of a

2   private network and a public network.

1   23.   The method of claim 13 wherein the description file is an abstract

2   syntax notation (ASN) file.

1   24.   The method of claim 23 wherein the table is generated by an ASN

2   compiler.

1   25.   A computer program product comprising:

2   a machine useable medium having computer program code
3   embedded therein, the computer program product having:

4   computer readable program code to store in a table a plurality of
5   entries for a packet in a sequence of packets of a message transmitted from
6   a first network to a second network, the entries including a first connection
7   identifier corresponding to the first network, the entries being obtained
8   from a description file of the packet; and

9   computer readable program code to parse the sequence of packets
10   using the table, the parser extracting the first connection identifier.

1   26.   The computer program product of claim 25 further comprises:

2   computer readable program code to translate the first connection identifier
3   into a second connection identifier corresponding to the second network.

1   27.   The computer program product of claim 26 wherein the computer
2   readable program code to store comprises:

3   computer readable program code to specify a message type characterizing
4   the message by at least a message type entry; and

5   computer readable program code to specify a data type of a subsequent
6   packet in the sequence of packets by at least a data type entry.

1   28.   The computer program product of claim 27 wherein the at least
2   data type entry indicates a location of the first connection identifier in the
3   subsequent packet.

1   29.   The computer program product of claim 27 wherein the at least
2   data type entry comprises a termination entry to indicate that a remaining portion
3   of the sequence of packets does not contain the first connection identifier.

1   30.   The computer program product of claim 29 wherein the computer
2   readable program code to parse comprises computer readable program code to
3   skip the remaining portion of the sequence of packets upon recognizing the
4   termination entry.

1   31.   A system comprising:

2   an end node in a first network to communicate a message to a
3   second network; and

4   a router coupled to the end node to route the message, the router
5   including a network address translation (NAT) processor, the NAT
6   processor comprising:

7   a table to store a plurality of entries for a packet in a sequence of
8   packets of the message, the entries including a first connection
9   identifier corresponding to the first network, the entries being
10   obtained from a description file of the packet, and

11   a parser coupled to the table to parse the sequence of packets using
12   the table, the parser extracting the first connection identifier.

1   32. The system of claim 31 wherein the NAT processor further

2 comprises:

3   a translator coupled to the parser to translate the first connection identifier

4 into a second connection identifier corresponding to the second network.

1   33. The system of claim 32 wherein the table comprises:

2   at least a message type entry to specify a message type characterizing the

3 message; and

4   at least a data type entry to specify a data type of a subsequent packet in

5 the sequence of packets.

1   34. The system of claim 33 wherein the at least data type entry

2 indicates a location of the first connection identifier in the subsequent packet.

1   35. The system of claim 33 wherein the at least data type entry

2 comprises a termination entry to indicate that a remaining portion of the sequence

3 of packets does not contain the first connection identifier.

1   36. The system of claim 35 wherein the parser skips the remaining

2 portion of the sequence of packets upon recognizing the termination entry.